

REMARKS

Claims 1-6, 8, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Andry et al. (U.S. Patent No. 6,724,449) in view of Konuma et al. (U.S. Patent No. 7,227,603) and Suzuki et al. (U.S. Pub. No. 2002/0080320). Applicants traverse the rejection because the cited references, taken alone or in combination, fail to disclose or suggest at least one alignment direction controlling section arranged in a predefined pattern, as recited in independent claim 1 of the present application.

Andry discloses that a polymer wall or ridge is located on a top plate electrode in the middle of each pixel, and that a dry vertical alignment film covers both the top and bottom substrate, including the ridge (Andry, col. 6, lns. 40-44). Accordingly, Andry fails to disclose an alignment direction controlling section that directly contacts the liquid crystal layer.

Konuma shows, in Fig. 3, that a plurality of protrusions or grains 27 are formed from resin on an orientation means 24 or 25. The grains 27 are in contact with the liquid crystal material. Konuma teaches that the grains are formed when a resin is separated and deposited in such a manner that it is expelled from a liquid crystal material mixture. After the resin is nearly completely separated from the liquid crystal, the resin is cured to form the plurality of protrusions (see Konuma, col. 17, ll. 14-19). The reference further teaches that when a substrate is observed by scanning electronic microscope after the resin on the substrate has been allowed to cure, a plurality of very small protrusions having a height of 10

nm and a diameter of 500 nm or less can be seen (see Konuma, col. 16, ll. 22-27).. Accordingly, the protrusions of Konuma are formed based on how the resin is expelled from the liquid crystal mixture, and not in any predefined pattern.

Suzuki is cited merely as disclosing that polarizing plates 720 are disposed on outer surfaces of substrates used to form a liquid crystal display, and that quarter wave plates 721 are disposed between the polarizing plates 720 and the corresponding substrate. However, Suzuki is silent regarding any alignment direction controlling section formed on one or both surfaces of the substrates that contact the liquid crystal layer.

In contrast, claim 1 of the present application recites that at least one alignment direction controlling section is arranged in a predefined pattern. In particular, Figs. 5, 6 and 11A-11D of the present application show photo masks that to create predefined patterns used to form the alignment direction controlling sections. Because the cited references, taken alone or in combination, fail to disclose or suggest one or more alignment direction controlling sections arranged in a predefined pattern and directly contacting the liquid crystal layer, withdrawal of the rejection of independent claim 1 and its associated dependent claims 2-6, 8 and 9 is respectfully requested.

For the foregoing reasons, applicants believe that this case is in condition for allowance, which is respectfully requested. The examiner should call applicants' attorney if an interview would expedite prosecution.

If a Petition under 37 C.F.R. §1.136(a) for an extension of time for response is required to make the attached response timely, it is hereby petitioned under 37 C.F.R.

§1.136(a) for an extension of time for response in the above-identified application for the period required to make the attached response timely.

The Commissioner is hereby authorized to charge fees which may be required to this application under 37 C.F.R. §§1.16-1.17, or credit any overpayment, to Deposit Account No. 07-2069.

Respectfully submitted,

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